

Claims

5 1. An aircraft landing gear including a noise-reducing element that includes an air-deflecting surface and an airflow-reducing region having more than 10 apertures through which, in use, air may pass, whereby the noise-reducing element is able in use to deflect air away from a noise-

10 generating region of the landing gear, whilst allowing some air to pass through the element, thereby reducing the noise caused by the passing of the landing gear through the air.

15 2. An aircraft landing gear according to claim 1, wherein the noise-reducing element includes at least 20 apertures.

3. An aircraft landing gear according to claim 2, wherein the noise-reducing element includes at least 50 apertures.

20 4. An aircraft landing gear according to claim 2 or claim 3, wherein the apertures are in the form of perforations.

25 5. An aircraft landing gear according to any of claims 2 to 4, wherein the arrangement of the apertures across the air-deflecting surface is non-uniform.

30 6. An aircraft landing gear according to any of claims 2 to 5, wherein the air-deflecting surface includes a first region encompassing no apertures and a second region encompassing at least ten apertures, the area covered by the first region having a minimum dimension that is at least as great as the maximum dimension of the area covered by the second region.

- 24 -

7. An aircraft landing gear according to claim 6, wherein the first region is near to the periphery of the air-deflecting surface.

5 8. An aircraft landing gear according to any preceding claim, wherein the airflow-reducing region is disposed between two regions defined by the air-deflecting surface.

9. An aircraft landing gear according to any of claims 2 to  
10 8, wherein the apertures are each round in cross-section.

10. An aircraft landing gear according to any of claims 2 to 9, wherein the sum of the cross-sectional area of all of the apertures (at their narrowest) in the airflow-reducing region  
15 is equal to a percentage in the range from 15% to 60% of the total area of the airflow-reducing region.

11. An aircraft landing gear according to claim 10, wherein the percentage is between 20% and 50%.

20 12. An aircraft landing gear according to any preceding claim, wherein the airflow-reducing region covers an area, which would, if the airflow-reducing region were replaced with an extension of the air-deflecting surface, cover at least one  
25 stagnation point or cover at least the majority of a stagnation line.

13. An aircraft landing gear according to any preceding claim, wherein the noise-reducing element is so arranged that  
30 in use it shields at least a part of the landing gear.

14. An aircraft landing gear according to any preceding claim, wherein the noise-reducing element is in the form of a fairing that covers at least a part of the landing gear.

- 25 -

15. An aircraft landing gear according to claim 13 or claim 14, wherein said part of the landing gear, when the landing gear is in a position that supports the aircraft on the ground, is in the region of a centre steering column of a nose gear, a tow-bar, the underneath of a bogie of a main landing gear, an articulated linkage, one or more rods, a brake actuator, a steering actuator, a door that in its closed position covers the aperture through which the landing gear passes when being deployed, and/or a dragstay.

10

16. An aircraft landing gear according to any preceding claim including two or more noise-reducing elements, each noise-reducing element including an air-deflecting surface and an airflow-reducing region through which, in use, air may pass.

15

17. An aircraft landing gear according to any preceding claim, wherein the landing gear is movable from a stored position to an operative position.

20

18. An aircraft landing gear including a noise-reducing element that includes an air-deflecting surface and an airflow-reducing region through which, in use, air may pass, whereby the noise-reducing element is able in use to deflect air away from a noise-generating region of the landing gear, whilst allowing some air to pass through the element, thereby reducing the noise caused by the passing of the landing gear through the air.

25

30 19. An aircraft including a landing gear according to any preceding claim.

- 26 -

20. A method of reducing noise caused by landing gear on an aircraft including a step of manufacturing a landing gear according to any of claims 1 to 18.

5 21. A method according to claim 20 further including a step of modifying an existing design in order to reduce noise caused by the landing gear.

10 22. A noise-reducing element for use on an aircraft landing gear, the noise-reducing element including an air-deflecting surface and an airflow-reducing region through which, in use, air may pass, whereby the noise-reducing element is able in use to deflect air away from a noise-generating region of the landing gear, whilst allowing some air to pass through the 15 element, thereby reducing the noise caused by the passing of the landing gear through the air.

20 23. A noise-reducing element according to claim 22, wherein the noise-reducing element is so configured that it is suitable for use as the noise-reducing element of an aircraft landing gear according to any of claims 2 to 12.